Health Effects of Unintended Childbearing:
Examining Mental and Physical Health of Mothers and Fathers

In 2001, 49 percent of all pregnancies in the United States were unintended and one-third of unintended pregnancies ended in live births (Finer and Henshaw 2006). Pregnancy intention, that is whether a pregnancy is planned at the time of conception, has been important to demographers and public health researchers to determine unmet need for family planning services and as a determinant of negative maternal health choices and related negative infant health outcomes. The Committee on Unintended Pregnancy at the Institute of Medicine declared in 1995: "The consequences of unintended pregnancies are serious, imposing appreciable burdens on children, women, men, and families" and proposed a goal to eliminate all unintended pregnancies in the United States (Brown and Eisenberg 1995).

Most research on the effects of unintended pregnancies ending in live births focuses on outcomes for the child, starting with their mother's prenatal care through child development outcomes and mother-child relationship dynamics. We intend to research the effect an unintended pregnancy may have on the mother and father, rather than focusing solely on maternal health behaviors or mother-child relationship dynamics.

Background

The majority of research on the effects of unintended fertility on mothers and fathers centers on mental health outcomes for mothers. Childbearing is a stressful experience, and having an unintended—or unwanted—child increases the pressure (Barber, Axinn and Thornton 1999; Brown and Eisenberg 1995). The effects of unintended fertility are likely lasting, as stress, depression and anxiety may continue as mothers care for the unintended child. These effects may be amplified because of a lack of attachment with the child.

Past research links unintended fertility with negative psychosocial and mental health outcomes; anxiety and depression are both strongly associated with unintended childbearing (Gipson, Koenig and Hindin 2008; Barber, Axinn and Thornton 1999; Brown and Eisenberg 1995). Additionally, the feelings of powerlessness that may result from an unwanted pregnancy may worsen existing or may contribute to new bouts of anxiety and depression (Barber, Axinn and Thornton 1999).

Though anxiety and depression have strong links to unintended pregnancies, it is uncertain how long those effects last. A 2005 Italian study measured mood states in the last month of pregnancy and then one, six and twelve months after the birth and found that women with unplanned pregnancies experience higher levels of anxiety, depression, confusion than women with planned births. Women whose pregnancy was unplanned were more likely to have persisting anxiety up to twelve months after the birth (Grussu et al. 2005). Other research conducted by Najman et al. (1991) in Australia measures anxiety and depression levels shortly before and after childbirth and again six months after giving birth. Women with unwanted children experience higher levels of anxiety and depression, although the differences between the two groups of women narrow over time.

However, Gipson, Koenig and Hindin (2008) point out that research linking mental health outcomes and unintended pregnancies is limited; Barber, Axinn and Thornton's sample from the U.S. only includes white respondents who are less likely to experience unintended pregnancies than other

minority groups. Additionally, neither Najman et al. nor Grussu et al. include measures of anxiety or depression prior to pregnancy. This limitation in the data used could indicate that rather than unintended pregnancies causing depression and anxiety, women with depression and anxiety are more likely to experience unintended pregnancies. By using longitudinal data and utilizing change score models, our research will be able to make stronger causal claims.

Besides mental health outcomes, limited research has looked at physical health problems as possible effects of unwanted childbirth. Barber, Axinn and Thornton do not find evidence of significant relationships between unintended pregnancy and physical health problems, though other work finds an association between unintended pregnancy and domestic violence (Brown and Eisenberg 1995).

Research on paternal health effects of unintended pregnancy is also lacking, most likely because few data include measures of father's fertility intentions. Both Brown and Eisenberg (1995) and then, thirteen years later, Gipson, Koenig and Hindin (2008), note the scarcity of research on fathers. The available research on fathers focuses on father's participation with unintended children: fathers of unintended children have lower levels of participation (Gipson, Koenig and Hindin 2008), and resident fathers generally demonstrate less warmth and fewer nurturing behaviors toward unintended children (Bronte-Tinkew et al. 2007).

We feel it is important to consider the effects an unintended pregnancy might have on fathers because of their relative lack of control in determining the outcome of the pregnancy. Furthermore, the intention status of fathers has largely been garnered via the mother, whereas this dataset allows for comparison of true disagreement and the effects this might have on fathers.

Specific Aims

1. Examine health effects (overall physical and mental) of unwanted childbearing controlling for physical and mental health before experiencing unwanted childbearing.
2. Determine whether health effects of unwanted childbearing are lasting.
3. Determine whether there are differences in health effects by measurement of unwantedness.
4. Determine how these effects vary for mothers and fathers.

Data and Research Methods

Data are from the National Survey of Families and Households (NSFH), Waves 1 and 2. The NSFH is a panel study of primary respondents, spouses and partners at Wave 1 (n=12,247). The data were gathered to examine aspects of the American family experience over the life course, including fertility histories. The first wave of data was collected 1987-88 and includes an oversample of blacks, Mexican Americans, single-parent families, blended families and cohabiting and recently married couples (Sweet, Bumpass and Call 1988). The second wave was gathered as a five year follow-up (collected 1992-94, n=10,007). Close to 82% of the original primary respondents completed interviews in Wave 2. The attrition rate for women was 21.3% (Wave 1: n=7,416; Wave 2: n=5,838) and the rate for men was 19.8% (Wave 1: n=4,831; Wave 2: n=3,875).

Dependent Measures

This analysis will include measures for depression, happiness and self-reported overall health modeled after Barber, Axinn and Thornton (1999). *Depression* is measured with an 11 question version

of the CES-D, and is assessed at both waves of data. Depression was assessed with the question, "How many days during the past week did you…?" for each of the following components: (a) "Not feel like eating: your appetite was poor?" (b) "Feel that you could not shake off the blues even with help from your family or friends?" (c) "Have trouble keeping your mind on what you were doing?" (d) "Feel depressed?" (e) "Feel that everything you did was an effort?" (f) "Feel fearful?" (g) "Sleep restlessly?" (h) "Talk less than usual?" (i) "Feel lonely?" (j) "Feel sad?" (k) "Feel you could not get going?" Thus, respondents reported values of 0-7 for each of these components and the responses were averaged to form a depression scale ranging from 0 to 7.

Happiness is measured by the question, "Taking things all together, how would you say things are these days?" with responses ranging from 1 ("very unhappy") to 7 ("very happy").

Overall health is assessed by the question, "Compared with other people your age, how would you describe your health?" The response scale ranged from 1 ("very poor") to 5 ("excellent"). Self-reported measures of overall health have been shown to be accurate measures of overall health status (Williams NIH Proposal; Ferraro and Farmer 1999)

Measures of Unwanted Fertility

The NSFH includes a variety of measures of unwanted fertility. This analysis will utilize a variation of the retrospective direct, ideal vs. actual (modified) and prospective methods for estimating unwanted fertility. Each method will be included in analyses as dichotomous variables (coded 0 for no unwanted childbearing and 1 if have experienced unwanted childbearing).

With the *Retrospective Direct* method (the version presented here is a modified version), respondents are asked, "Sometimes people have (a child/another child) after they intend not to have any (more) children. Has this ever happened to you?" If the respondent answers affirmatively they are then asked, "Which births occurred after you intended not to have any more children?" Since the data includes the birthdates of all children born to the respondent, indicating which children are unwanted enables the researcher to know when the respondent experienced unwanted childbearing. There are potential problems with this measure. Past research suggests that the Retrospective Direct is downwardly biased, as respondents are less likely to report that a living, loved child is unwanted (Williams and Abma 2000).

The other traditional measure of unwanted fertility, *Ideal vs. Actual* is modified in the NSFH with the question, "What is the total number of children you intend to have (including those you have now)?" Usually the Ideal vs. Actual measure includes the phrase, "Going back to the time when you didn't have any children," which serves to lower the upward bias of this measure. The omission of this phrase in the NSFH measure most likely contributes to upward bias. Additionally, most measures of Ideal vs. Actual do not include the phrase, "including those you have now." The inclusion of this phrase also introduces more upward bias as respondents may not give a lower number of desired children than they already have (Casterline and El-Zeini 2007). However, the Ideal vs. Actual measure is still widely used and is included in this analysis as a comparison method. In this case, the ideal number of children at each wave is compared with the number of children in that wave and the excess actual children are coded unwanted at each wave.

The third measure of unwanted fertility is a *Prospective Assessment*, which is considered less biased than traditional methods because it asks about future intentions without including retrospective

bias (Casterline and El-Zeini 2007). In the NSFH, the respondent is first asked at Wave 1, "Do you intend to have (a/another) child sometime?" If a respondent reports in Wave 1 that they do not want more children and then have a child/children between Wave 1 and Wave 2, those children are coded as unwanted. Though fertility preferences can change, they are generally considered stable predictors (Schoen et al. 1999). Additionally, most respondents who report wanting to have another child anticipate the birth occurring in the next five years, which is the period between NSFH Waves 1 and 2, suggesting that our analyses will catch a good share of the intended births for comparison.

Control Variables

Based on previous research, the analysis will control for other characteristics which may influence health outcomes and unwanted pregnancies, including *gender*, *race* (Black, White, Hispanic and Other), *education* (completed years), *employment status* (dummy variables: no <omitted reference category>, Part and Full-time), *marital status* (dummy variables: married <omitted reference category>, never married, divorced), *total family income* (in dollars) and *total number of children*.

Analytic Strategy

This research will use Change Score Models to estimate the models below. Change Score Models are an advantageous alternative to OLS Regression with a lagged dependent variable because the Change Score Models' parameter estimates are less affected by measurement error (Johnson 1995). Change Score Models are used with panel data and introduce the effect of an event between the two models, in this case an unwanted birth, by subtracting all the predictors and outcome at Wave 1 from Wave 2. Thus, the model controls for the effects of variables before the unwanted birth. The form of the model is specified below:

$$(Y_{i2} - Y_{i1}) = b_1 X_i + e'_i$$

When the change is calculated, time-invariant variables disappear. Thus, time-invariant coefficients are controlled for automatically. However, the effects of time-invariant coefficients may be modeled by the inclusion of interaction terms.

We first will examine health effects (overall physical and mental) of unwanted childbearing controlling for physical and mental health before experiencing unwanted childbearing. The sample is those who had a child between Waves 1 and 2. The outcome variables are physical and mental health and happiness at Wave 2; the models will be run separately for each dependent variable.

Additionally, we will test for long term effects (5+ years) of unwanted births by examining those who already reported unwanted births in Wave 1. We will estimate all models using all three measures of unwantedness to determine if there are differences in health effects by unwantedness measurement. Finally, we will explore how health effects differ for mothers and fathers.

Expected Findings

We anticipate finding that having an unwanted birth significantly affects mental health outcomes. Specifically, we expect to find that the incidence of an unwanted birth increases the likelihood and severity of depression. Moreover, we posit that unwanted childbearing has lasting effects. We expect to find that those who have unwanted children at Wave 1 are still likely to be

significantly more depressed at Wave 2. Likewise, we expect to find that unwanted childbearing significantly decreases happiness and worsens self-reported physical health.

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